

THREE-AWN GRASS

THREE-AWN GRASS (*Aristida longiseta* Steud.)

A native, perennial bunchgrass found on arid grasslands of the western USA. It is propagated by seed. Ecoregions: Columbia Plateau, Snake River Plain, and Northern Basin and Range. Purple three-awn (*Aristida purpurea* Nutt.) a native, perennial grass occurs in the Great Basin region on dry, sandy sites.

WHEATGRASS

BEARDLESS BLUEBUNCH WHEATGRASS [#12] (*Pseudoroegneria spicata* ssp. *inermis* [Scrib. & J.G. Smith] A. Love).

A native, long-lived, awnless, cool-season bunchgrass, up to three feet tall at maturity. Beardless bluebunch wheatgrass naturally occurs on a wide range of prairie soils, loam, silt loam, and sometimes clay loam. It requires from 14 to 25 inches mean annual precipitation. It provides late spring herbage and cures well for native grass hay. It is very useful for erosion control, grassland rehabilitation, and wildlife habitat restoration. Beardless bluebunch wheatgrass is propagated by seed. Seed is harvested in late summer. It may take two to three years for establishment. Cultural significance: wheatgrass has been used as fodder for deer, elk, and domestic livestock; the leaves were brewed and applied to sore, arthritic limbs. It is a component of sage-grouse habitat. Ecoregions: Columbia Plateau, Northern Rocky Mountains, Blue Mountains, and Idaho Batholith. **Cultivar/Variety**: 'Whitmar' beardless bluebunch wheatgrass released by the Pullman Plant Materials Center, Washington (USDA NRCS) is the only commercially available cultivar. The original source of Whitmar was collected from a Palouse Prairie site near Colton, Washington.

Average number of seeds per pound: 125,000. 3.0 seeds/sq.ft./lb/acre.

Drill seeding rate: six pounds per acre for a single species seeding.

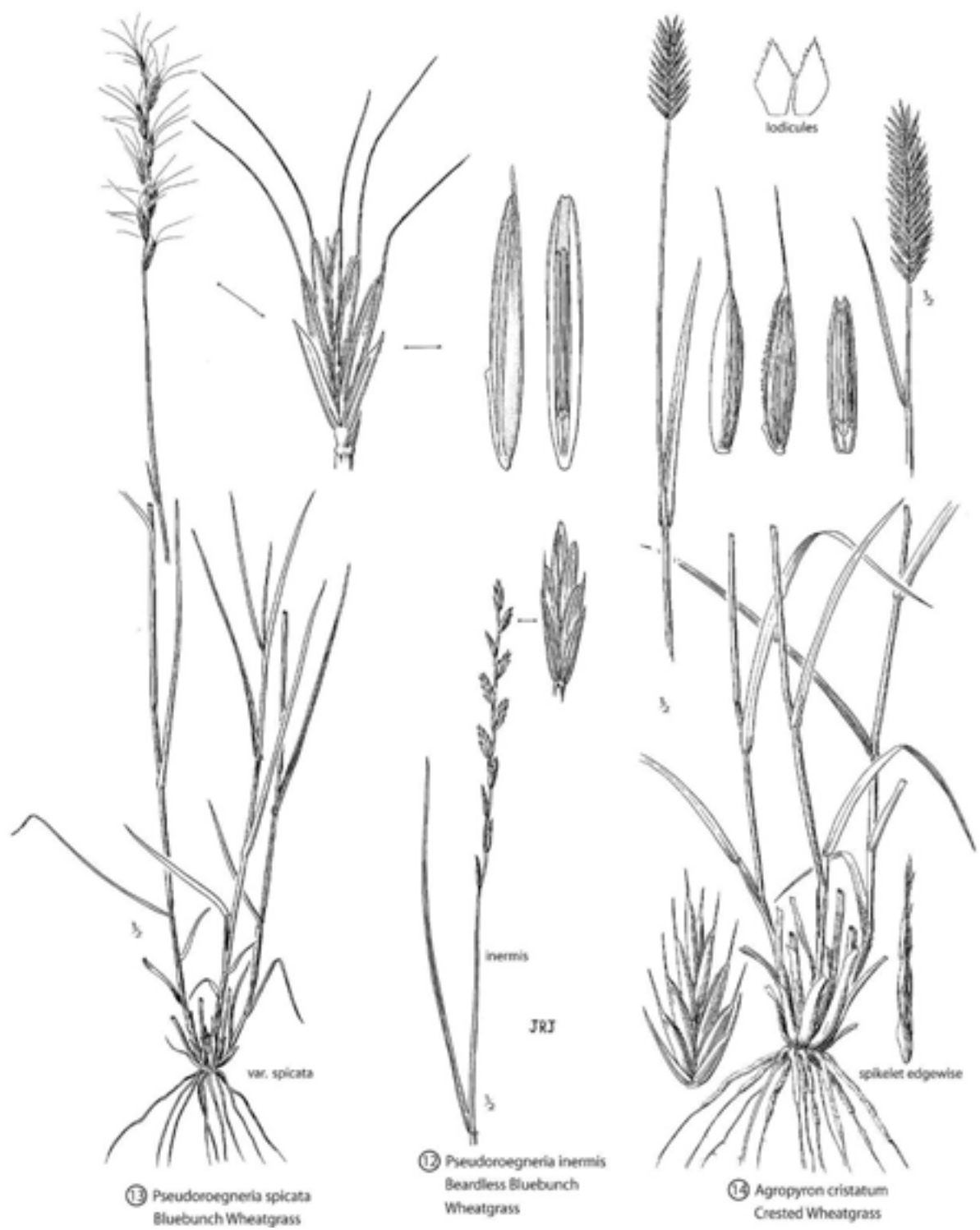
BLUEBUNCH WHEATGRASS [#13] (*Pseudoroegneria spicata* ssp. *spicata* [Pursh] A. Love)

A native, long-lived, awned, cool-season bunchgrass, up to three feet tall at maturity. It naturally occurs in grasslands, dry prairies, and shrub-steppe of the western North America, from western Canada south to California, east to Montana and New Mexico. Bluebunch wheatgrass is a major component of the sagebrush-grasslands of the northern Great Basin. Bluebunch wheatgrass has great morphological and genetic variation within the numerous ecotypes. New growth in the spring is earlier than most other native grasses. It is propagated by seed; seed is harvested in late summer. It is an important component of sage-grouse habitat. Soils: sandy loam to silt loam, well drained, neutral to very slightly basic pH. Mean annual precipitation range is eight to 30 inches. Cultural significance of bluebunch wheatgrass: the plants were harvested as forage for domestic livestock and native ungulates; wheatgrass leaves were brewed and the leaves, or tea, were applied to sores, arthritic joints and limbs. Ecoregions: Columbia Plateau, Blue Mountains, Eastern Cascades, Northern Rocky Mountains, Middle Rocky Mountains, Snake River Plain, portions of the Northern Basin and Range, and Wasatch Mountains.

Cultivars/Varieties: Anatone bluebunch wheatgrass, a source-identified prevarietal germplasm, was developed by the US Forest Service Shrub Sciences Lab; excellent drought tolerance; source was from an arid land site in Hell's Canyon near Lewiston, Idaho. 'Goldar', a native cultivar released by the Aberdeen Plant Materials Center (ID); source seed was collected from a Ponderosa pine-big sagebrush site near Anatone, Washington. Other native source-identified seed is commercially available including: Wahluke, a source-identified native germplasm from a very dry site near Hanford, Washington in the Columbia Basin. P7 bluebunch wheatgrass is a bulk composite of over 20 diverse ecotypes; it is a prevarietal germplasm release by ARS, Logan, Utah. Average number of seeds per pound: 120,000 to 150,000. 3.2 seeds per square foot for every one pound seeded per acre. Drill seeding rate: six pounds per acre, single species.

CRESTED WHEATGRASS [#14] (*Agropyron cristatum* [L.] Gaertn.)

A perennial, non-native bunchgrass species that was introduced to western North America from the steppes and grasslands of Central Asia (Russia, Kazakhstan, and western China). Height at maturity is 24 inches; mean annual precipitation is seven to 14 inches. **Cultivars/Varieties:** Crested wheatgrass cultivars include 'Fairway', 'Ephraim', 'Douglas' and 'Roadcrest' developed from Eurasian germplasm by Utah-ARS. 'Nordan' is a cultivar of desert wheatgrass (*Agropyron desertorum* [Fisch. ex Link] J.A. Schultes) developed in North Dakota-Montana as livestock forage and soil stabilization. 'Hycrest' and CDII hybrid wheatgrass (*A. cristatum* X *A. desertorum*) were developed by Utah-ARS for improved seedling vigor and seed production. Average number of seeds per pound: 200,000. 4.5 seeds/sq.ft./lb/acre. Drill seeding rate: six pounds per acre for a single species.



INTERMEDIATE WHEATGRASS [#15] (*Elytrigia intermedia* [Host] Nevski)

A non-native perennial, bunchgrass species introduced from the former USSR (Central Asia area and southern Siberia). It may be slightly rhizomatous. Intermediate wheatgrass has been utilized as a pasture and forage grass in the western USA. It requires a minimum of 13 inches of annual rainfall to establish. **Cultivars/Varieties** of intermediate wheatgrass include: ‘Oahe’ (ND) and ‘Greenar’ (WA).

Average number of seeds per pound: 110,000. 2.5 seeds/sq.ft./lb/acre.

Drill seeding rate: eight pounds per acre for a single species.

PUBESCENT WHEATGRASS (*Elytrigia intermedia* [Host] Nevski)

Introduced bunchgrass species from Eurasian germplasm, same species as intermediate wheatgrass, a pubescent variety. It was developed for livestock forage and erosion control. It is more drought tolerant than intermediate wheatgrass, minimum of 11 inches of mean annual precipitation for survival. **Cultivars/Varieties:** Including ‘Luna’ (NM) and ‘Mandan’ (ND).

Average number of seeds per pound: 95,000. 2.2 seeds/sq.ft./lb/acre.

Drill seeding rate: eight pounds per acre for a single species.

SIBERIAN WHEATGRASS (*Agropyron fragile* ssp. *sibericum* [Willd.] Melderis)

An introduced, perennial bunchgrass species from Central Asia and Russian seed sources. It performs best on sandy loam to sandy soils; mean annual precipitation of six to 12 inches is required for establishment. **Cultivars/Varieties:** ‘P27’ (ID) and ‘Vavilov’ (UT-ARS). Average number of seeds per pound: 220,000. 5.0 seeds/sq.ft./lb/acre.

Drill seeding rate: six pounds per acre for a single species.

SLENDER WHEATGRASS (*Elymus trachycaulus* [Link] Gould ex Shinners)

A native, short-lived, cool-season bunchgrass; naturally occurs on grasslands and open woodlands in western North America. Slender wheatgrass plants usually live for three to five years. It is an early seral grass with a rapid rate of establishment. Slender wheatgrass is shade tolerant and slightly alkali tolerant. Soils: loam to sandy loam soils at mid to high elevations that receive a minimum of 15 inches mean annual precipitation. It has also been used for short-term irrigated hay and pasture or as a “green manure” crop, often seeded with clover. Ecoregions where slender wheatgrass naturally occurs: Columbia Plateau (Palouse Prairie), Blue Mountains, Northern Rocky Mountains, Middle Rocky Mountains, and Wasatch Mountains. **Cultivars/Varieties:** First released native cultivar of slender wheatgrass was ‘Primar’; it is not currently in seed production.

‘Pryor’ released by the Bridger Plant Materials Center (MT), has improved seedling vigor and alkali tolerance. ‘San Luis’ was released by the Meeker Plant Center (CO) for high elevations and cold tolerance. ‘Revenue’ slender wheatgrass is a private release from Canadian sources with good seedling establishment, salinity tolerance, good herbage and seed production and high leaf to stem ratio. Average number of seeds per pound: 160,000. Averages 3.7 seeds/sq.ft./lb/acre. Drill seeding rate: seven pounds per acre, single species, or two pounds per acre in a seed mixture.

SNAKE RIVER WHEATGRASS (*Elymus wawawaiensis* J. Carlson & M. Barkworth)

A native, long-lived, drought tolerant bunchgrass that is found along the canyons and tributaries of the Snake River from the Riggins, Idaho area to south west of Pasco,

Washington. Soils: well-drained, sandy loam to silt loam. Mean annual precipitation: seven to 16 inches. Ecoregions: Columbia Plateau and Blue Mountains.

Cultivars/Varieties: A native variety of Snake River wheatgrass is ‘Secar’, released by the Pullman Plant Materials Center (WA). The source seed was originally collected from an arid Palouse Prairie site on the old Lewiston Grade, near the Idaho-Washington border at 1800 to 2000 feet elevation on a sandy loam soil.

Average number of seeds per pound: 160,000. One pound of pure live seed (PLS) seed spread over one acre is 3.7 seeds per square foot. Drill seeding rate: six pounds per acre.

STREAMBANK WHEATGRASS (*Elymus lanceolatus* ssp. *psammophilus* [Gillett & Senn] A. Love)

A perennial, sod-forming grass that occurs on grasslands, prairies, and stream banks in the northwestern USA. Soils: clay loam to silt loam, annual precipitation from eleven to 25 inches. It has been used for site rehabilitation, erosion control, soil stabilization along roadsides and ditchbanks, and weed suppression. Streambank wheatgrass stays green from spring to mid-summer; therefore, it may have good potential for fire suppression. It withstands some animal and vehicle traffic; potential for low maintenance turf. It is propagated by seed, harvested late summer. Ecoregions: Eastern Cascades, Columbia Plateau, Blue Mountains, and Snake River Plain. **Cultivars/Varieties**: ‘Sodar’ streambank wheatgrass was released by the Aberdeen Plant Materials Center (ID). It has excellent seedling vigor. Seed source was originally collected from a shrub-steppe site in Grant County, located in central Oregon.

Average number of seeds per pound: 170,000. One pound of pure live seed (PLS) seed spread over one acre provides 3.9 seeds per square foot.

Drill seeding rate: six pounds per acre, single species for a single species or one to two pounds per acre in a seed mix.

TALL WHEATGRASS (*Elytrigia elongata* [Host] Nevski)

An introduced, non-native bunchgrass developed from Eurasian germplasm. Tall wheatgrass may exceed 60 inches in height at maturity. It requires a minimum of 13 inches of mean annual precipitation for establishment. Soils: Clay loam to silt loams.

Cultivars/Varieties: ‘Alkar’ released by the Pullman Plant Materials Center (WA), for northern and central areas of the Great Basin, improved alkali tolerance. ‘Jose’ and ‘Largo’ were released by the Los Lunas Plant Materials Center (NM), recommended for use in the southwestern states. Average number of seeds per pound: 80,000.

1.8 seeds/sq.ft./lb/acre. Drill seeding rate: ten pounds per acre, single species.

THICKSPIKE WHEATGRASS [#16] (*Elymus lanceolatus* ssp. *lanceolatus* [Scribn. & J.G. Smith] Gould)

A native perennial, sod-forming, cool-season grass, up to 30 inches tall at maturity.

Thickspike wheatgrass naturally occurs in the shrub-steppe and arid grasslands of the northwestern states. Soils: usually grows on coarse textured soils, such as sandy loams.

Thickspike wheatgrass requires from seven to twenty inches of mean annual precipitation. The plants stay green long into summer and often appears to be fire tolerant. Thickspike wheatgrass is a component of sage-grouse habitat. Ecoregions: Columbia Plateau, Eastern Cascades, Snake River Plain, and areas in the Northern Basin and Range. **Cultivars/Varieties**: ‘Bannock’ thickspike wheatgrass was released by the Aberdeen Plant Materials Center (ID); it is a bulk composite consisting of several

ecotypes. 'Critana' is a low-growing cultivar with strong rhizomes released by the Bridger Plant Materials Center (MT); it was developed from a Montana seed source. 'Schwendimar' was released by the Pullman Plant Materials Center (WA); it is a native variety; original seed source was from one genotype collected from a natural stand near The Dalles, Oregon.

Average number of seeds per pound: 160,000. One pound of pure live seed (PLS) spread over one acre provides 3.6 seeds per square foot. Drill seeding rate: five pounds per acre. It is often used in a seeding mixture with other native grasses and forbs at the rate of two PLS pounds per acre.

WESTERN WHEATGRASS [#17] (*Pascopyrum smithii* [Rydb.] A. Love)

A perennial, cool-season, sod-forming grass native to the western North America.

Western wheatgrass is up to 24 inches in height at maturity with relatively coarse leaves.

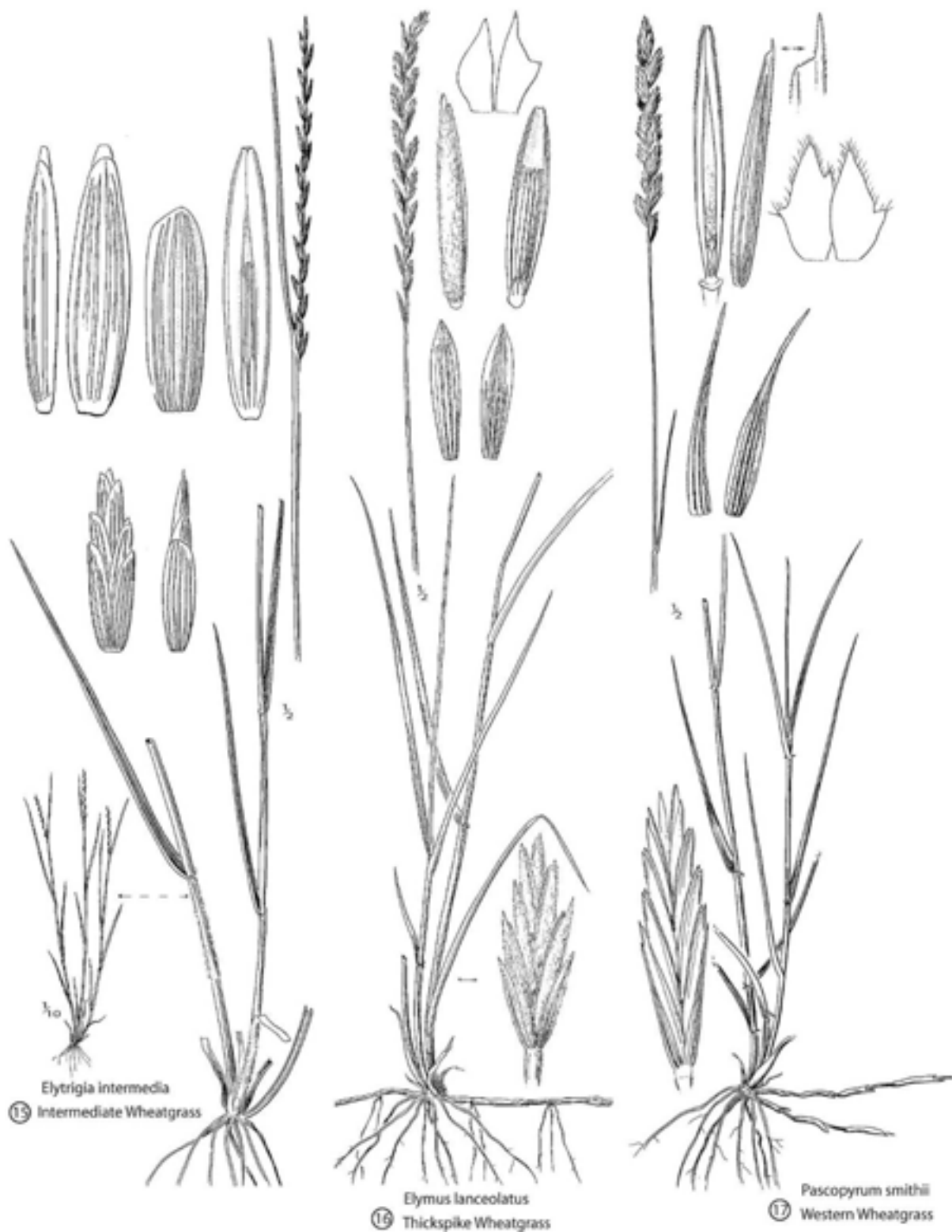
Soils: it is usually found heavy textured soils; clays to clay loams. It occurs on weakly to strongly saline soils; 11 to 24 inches of mean annual precipitation is required for establishment. Western wheatgrass is propagated by seed, harvested in mid-summer.

Ecoregions: Northern Rocky Mountains, Middle Rocky Mountains, Snake River Plain, Northern Basin and Range, Central Basin and Range, and Wasatch Mountains.

Cultivars/Varieties: 'Arriba' western wheatgrass is a native cultivar released by the Los Lunas Plant Materials Center (NM) for use in the southwestern states. 'Rosana' was developed at the Bridger Plant Materials Center (MT) for northern areas. 'Barton' was developed for the use in the Great Plains states.

Average number of seeds per pound: 120,000. One pound pure live seed (PLS) spread over one acre provides 2.8 seed per square foot.

Drill seeding rate: seven pounds per acre, single species.



WILDRYE

BASIN WILDRYE [#18] (*Leymus cinereus* [Scribn. & Merr.] A. Love)

A native, cool-season, perennial grass with slightly spreading roots. Basin wildrye naturally occurs in grassland and shrub-steppe in the western North America. It requires 11 to 20 inches of mean annual precipitation. Basin wildrye is commonly found on well-drained bottomlands and foothills, and less frequently on alkaline sites. Soils: sandy loam to silt loams. It can reach six feet tall and three feet wide at maturity, with coarse, wide leaf blades. It is very long lived and has an extensive root system. Basin wildrye provides excellent wildlife cover, and is useful as livestock cover and as wind barriers. It is considered fair quality fodder for livestock and wildlife. Basin wildrye is native to most sites where tall wheatgrass has been planted for pasture and hayland. It stays green well into summer with adequate soil moisture, may provide some fire suppression. As is true for most grasses, it is propagated by seed. Basin wildrye is an important component of sage-grouse habitat. Ecoregions: Columbia Plateau, Eastern Cascades, Blue Mountains, Snake River Plain, Northern Basin and Range, and Central Basin and Range. **Cultivars/Varieties**: ‘Magnar’ was released by the Aberdeen Plant Material Center (ID); source of Magnar was from a shrub-steppe site south of Nelson, British Columbia. ‘Trailhead’ basin wildrye was released by the Bridger Plant Materials Center (MT), it has improved seedling vigor. Seed source of Trailhead was central Montana. Native source-identified seed of basin wildrye is available on request.

Average number of seeds per pound: 105,000 to 155,000, depending on cultivar or variety. One pound of pure live seed (PLS) spread over one acre provides about 3.0 seeds per square foot. Drill seeding rate: six pounds per acre, single species.

BLUE WILDRYE (*Elymus glaucus* Buckl.)

A native, fast-developing, short-lived perennial bunchgrass native to western North America. Blue wildrye is a common early seral plant species on sites where mean annual precipitation exceeds 16 inches. This widespread native grass has at least two distinct subspecies, with great genetic and morphological amplitude. Its typical natural habitat is open woods, prairies, shrub thickets, moist to dry hillsides from sea level to 6,000 feet in the Blue Mountains, Oregon. Soils: blue wildrye usually grows on sandy loam to silt loams. Important characteristics include a broad area of natural occurrence, high seed production, high seedling vigor, rapid establishment rate, a strong ability to reseed, provides soil protection quickly after fires or other disturbances, and is relatively compatible with coniferous tree establishment. Blue wildrye provides for wildlife habitat and has fair palatability for livestock. It is propagated by seed.

Ecoregions: Columbia Plateau (Palouse Prairie area), Cascades, Eastern Cascades, Blue Mountains, Northern Rocky Mountains, Middle Rocky Mountains, and Wasatch Mountains. **Cultivars/Varieties**: ‘Arlington’ and ‘Elkton’ are native varieties of blue wildrye released by the Corvallis Plant Materials Center for conservation and fire rehabilitation seedings in western Oregon and Washington. Other source-identified seed is also commercially available.

Average number of seeds per pound: 125,000 to 155,000. One pound pure live seed (PLS) spread across one acre provides about 3.1 seeds per square foot. Drill seeding rate: eight pounds per acre, single species.

CREEPING or SAND WILDRYE (*Leymus arenarius* [L.] Hochst.)

A native, perennial grass with strong rhizomes. Soils: Sands to sandy loams where annual precipitation exceeds eight inches.

AMERICAN DUNEGRASS (*Leymus mollis* ssp. *mollis* [Trin.] Hara)

A native, long-lived perennial grass that is sod-forming (rhizomatous). Soils: American dunegrass occurs on coastal sand dunes to sandy loams along the Pacific Coast, from British Columbia to southern California. It is propagated by seed or vegetative; no released cultivar; extremely limited quantity of commercial source-identified seed is available. Ecoregion: Pacific Coast Range. Drill seeding rate: ten pounds per acre.

MAMMOTH or GIANT WILDRYE [#19] (*Leymus giganteus* [Vahl] Pilger)

An Introduced grass species with strong rhizomes, from non-native Eurasian sources. A very tall, coarse grass up to six feet in height. It requires at least 12 inches of annual rainfall, usually on sandy soils. Giant wildrye is often propagated by planting the rhizomes. **Cultivar/Varieties**: ‘Volga’ released from the Plant Materials Center in Pullman, Washington.

Average number of seeds per pound: 75,000. 1.7 seeds/sq.ft./lb/acre.

RUSSIAN WILDRYE (*Psathrostachys juncea* [Fisch.] Nevski)

A non-native perennial bunchgrass introduced to the western USA from Russian and Central Asian seed sources. It requires at least ten inches of mean annual precipitation for establishment; usually does best with some summer rainfall. Soils: loam to silt loams.

Cultivars/Varieties: ‘Bozoisky’ Russian wildrye was developed by the Montana Plant Materials Center and ARS (USDA). ‘Vinall’ and ‘Mankota’ are cultivars developed by USDA in North Dakota. ‘Swift’ Russian wildrye was developed as a cultivar in Canada.

Average number of seeds per pound: 175,000. 4 seeds/sq.ft./lb/acre.

Drill seeding rate: seven pounds per acre, seeded as a single species.

YELLOW WILDRYE [#20] (*Leymus flavescens* [Scribn. & J.G. Smith] Pilger)

A native, perennial, cool-season, rhizomatous grass that occurs on coarse textured soils, primarily in the Columbia Plateau. Yellow wildrye requires at least eight inches of mean annual rainfall for establishment. It is propagated by seed or vegetative. No released cultivar or variety, but source-identified seed may be available. Ecoregions: Columbia Plateau and Eastern Cascades. Drill seeding rate: seven pounds per acre, seeded as a single species.

When purchasing seed of native grasses, forbs or shrubs, always request certified seed, “source-identified,” Native Cultivar or Cultivar of Non-Native or Introduced Species. “Source-identified” seed of plants from naturally occurring stands in the Great Basin region are available from private seed vendors for most of the native species mentioned in this guidebook.



GREAT BASIN FORBS

Wildflowers, including Herbaceous Legumes

AGOSERIS, ANNUAL (*Agoseris heterophylla* [Nutt.] Greene)

An annual composite forb, tap-rooted, with milky sap; up to 16 inches in height. Annual agoseris is native to dry prairies and grasslands, sometimes woodlands, in the foothills and lowlands in the western USA, including the Great Basin region. The *Agoseris* genus also includes perennial species that usually naturally occur in moist woodlands and meadows. Perennial native *Agoseris* species, such as pale agoseris (*Agoseris glauca* [Pursh] Raf.) are important botanical components of sage grouse habitat.

ALFALFA [#21] (*Medicago sativa* L.)

Introduced, herbaceous, perennial legume from Eurasian seed sources for hay and pastureland seedings in North America. Alfalfa has been utilized in the western USA as livestock forage and a nitrogen-fixation plant to improve soil health. Average number of seeds per pound: 230,000. **Cultivars/Varieties:** Alfalfa cultivars for use on aridlands in the Great Basin include 'Ladak', 'Ladak-65', 'Nomad', 'Spredor III' and other dryland alfalfa cultivars.

ASTER

At least 20 species of aster are native to the Great Basin region including the following species. *Aster* species are important components of sage grouse habitat.

ASTER, ALKALI (*Aster brachyactis* Blake), a perennial composite forb, native to arid alkali habitats in the interior western USA.

ASTER, CHILE (*Aster ascendens* Lindl.), a perennial composite forb with creeping rhizomes or branching roots; the most abundant aster in the Great Basin; it is native to wet to dry habitats from lowlands to 9,500 feet in the mountains.

ASTER, SHOWY (*Aster conspicuous* Lindl.), a perennial composite forb native to the western USA. Average number of seeds per pound: 1,000,000.

ASTER, SMOOTH (*Aster laevis* L.), a perennial composite forb native to the western USA. Smooth aster seed is harvested in the fall. Average number of seeds per pound: 1,100,000.

BALSAMROOT

BALSAMROOT, ARROWLEAF [#22] (*Balsamorhiza sagittata* [Pursh] Nutt.)

A perennial forb, with a woody taproot, native to the aridlands of the interior western USA, including the Northern and Central Basin and Range ecoregions. Arrowleaf balsamroot is often found in shrub-steppe (big sagebrush) plant communities. It is an

herbaceous member of the Composite (Sunflower) family. The wildland seed is harvested in mid-summer. Arrowleaf balsamroot is an important component of sage grouse habitat. Average number of seeds per pound: 55,000.

BALSAMROOT, CAREY'S (*Balsamorhiza careyana* Gray)

A perennial forb, with a woody taproot, native to the aridlands of the interior western USA, including the Northern and Central Basin and Range ecoregions. Carey's balsamroot is an herbaceous member of the Composite family.

BALSAMROOT, HOOKER'S (*Balsamorhiza hookeri* Nutt.)

A perennial forb, with a woody taproot, native to the aridlands of the interior western USA, including the Northern and Central Basin and Range ecoregions. It is an herbaceous member of the Composite family.

Average number of seeds per pound: 55,000.

BALSAMROOT, TOOTHED (*Balsamorhiza serrata* Nels. & Macbr.)

A perennial forb, with a woody taproot, native to the aridlands of the interior western USA, including the Northern Basin and Range ecoregion in Oregon. It is an herbaceous member of the Composite family. It is an important component of sage grouse habitat.

BEEPLANT

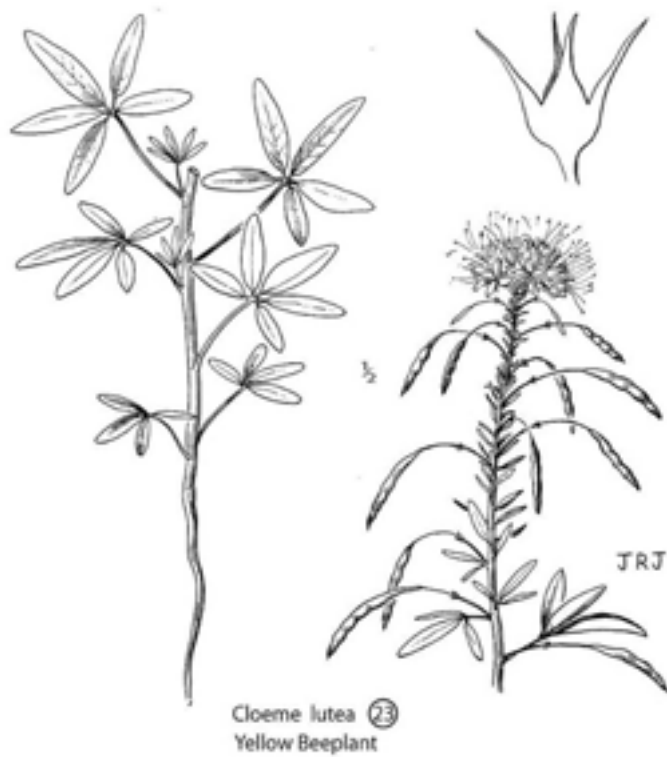
BEEPLANT, ROCKY MOUNTAIN (*Cleome serrulata* Pursh)

A perennial forb native to the mountainous regions of the interior western USA. Rocky Mountain beeplant usually occurs in middle to high elevations in the Great Basin region.

Average number of seeds per pound: 65,000.

BEEPLANT, YELLOW [#23] (*Cleome lutea* Hook.)

A perennial forb native to the aridlands of the interior western USA, including the Northern and Central Basin and Range and the Colorado Plateau ecoregions.



BISCUIT-ROOT/ DESERT-PARSLEY

LOMATIUM, BARE-STEM (*Lomatium nudicale* [Pursh] Coult. & Rose)

A perennial forb, with a woody taproot, native to the interior western USA, including portions of the Great Basin region. Bare-stem lomatium is an herbaceous member of the Carrot (Umbel) family. Cultural significance: important medicinal plant.

BISCUIT-ROOT, COUS' (*Lomatium cous* [Wats.] Coult. & Rose)

A perennial forb, with a woody taproot, native to the interior western USA. It is an herbaceous member of the Carrot family. Cultural significance: important medicinal plant.

LOMATIUM, DISSECTED-LEAF [#24] (*Lomatium dissectum* [Nutt.] Math. & Const.)

A perennial forb, with a woody taproot, native to the interior western USA on rocky slopes and dry meadows. It is an herbaceous member of the Carrot family. Cultural significance: important medicinal plant. It is an important component of sage grouse habitat. Average number of seeds per pound: 48,000.

DESERT-PARSLEY, GRAY'S (*Lomatium grayi* Coult. & Rose)

A perennial forb, with a woody taproot, native to the interior western USA. It is an herbaceous member of the Carrot family. Cultural significance: important medicinal plant. Gray's desert-parsley is an important component of sage grouse habitat. Average number of seeds per pound: 45,000.

LOMATIUM, NINE-LEAF (*Lomatium triternatum* [Pursh] Coult. & Rose)

A perennial forb with a woody taproot, native to the interior western USA on open slopes and meadows on dry to fairly moist soil, lowland to mid-montane sites. Nine-leaf lomatium is an herbaceous member of the Carrot family. It is an important component of sage grouse habitat. Average number of seeds per pound: 45,000.

DESERT-PARSLEY, SWALE (*Lomatium ambiguum* [Nutt.] Coult. & Rose)

A perennial forb, with a woody taproot, native to the interior western USA. It is an herbaceous member of the Carrot family. Cultural significance: important medicinal plant.

BLACK-EYED SUSAN

BLACK-EYED SUSAN (*Rudbeckia hirta* L.)

A perennial composite forb, a European species introduced to North America. Black-eyed susan is utilized as a wildflower in seeding mixtures in the western USA. It is a member of the Composite (Sunflower) family. Average number of seeds per pound: 1,500,000.

BLANKETFLOWER

BLANKETFLOWER [#25] (*Gaillardia aristata* Pursh)

A perennial composite forb native to aridlands the western USA, including the Great Basin region. Blanketflower is a member of the Composite (Sunflower) family.

Average number of seeds per pound: 200,000.

BLAZING-STAR

BLAZING-STAR (*Mentzelia laevicaulis* [Dougl.] T. & G.)

A perennial forb native to desert valleys in the western USA, including the Great Basin.

Average number of seeds per pound: 300,000.

SMALL BURNET

BURNET, SMALL [#26] (*Sanguisorba minor* Scop.)

A perennial composite forb, a European species introduced to North America, including the Great Basin area. Small burnet is an herbaceous member of the Rose family. It requires a minimum of 11 inches of annual precipitation for establishment. **Cultivar:** 'Delar' small burnet was released by the USDA NRCS Plant Materials Center, Aberdeen, Idaho. Average number of seeds per pound: 50,000. Seeding rate: One to two pounds of seed per acre in a seed mixture is sometimes recommended.

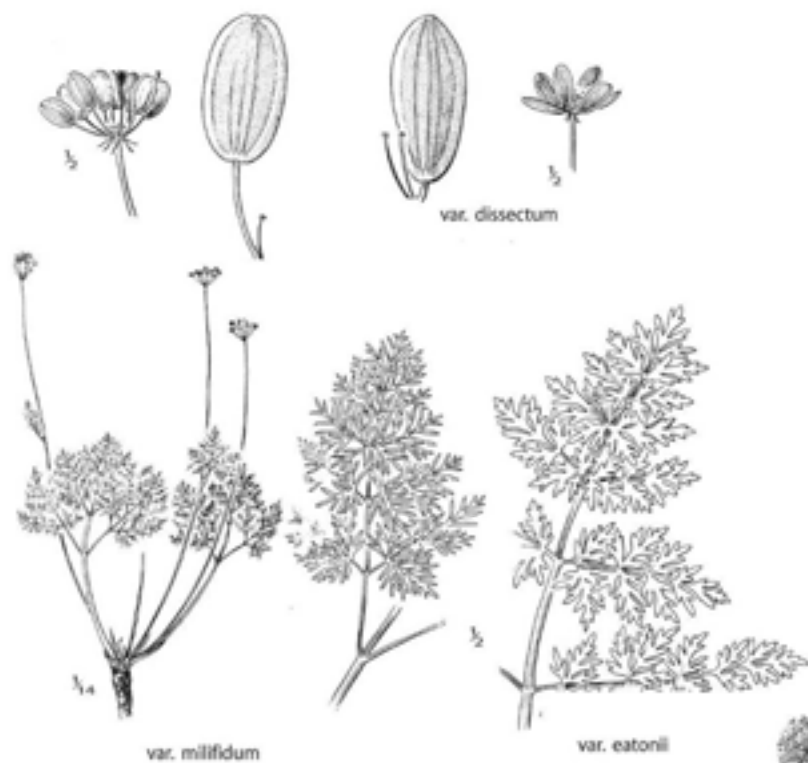
CAMAS

CAMAS, BLUE (*Camasia quamash* [Pursh] Greene)

A perennial forb native to moist meadows of western USA. Blue camas is a member of the Lily family. Cultural significance: Very important food plant, edible bulbs.

CAMAS, GREAT (*Camasia leichtlinii* [Baker] Wats.)

A perennial forb native to moist meadows of western Washington, Oregon and northern California. A member of the Lily family, a larger plant than blue camas. Cultural significance: Important food plant, edible bulbs.



24 *Lomatium dissectum*
Dissected Leaf Lomatium



CLOVER

The Clover genus (*Trifolium* sp.) includes native and non-native species. Unless otherwise stated, to maintain clovers on a site a *minimum of 16 inches of mean annual precipitation* is required. Native clovers have been identified as important forbs for sage grouse habitat.

CLOVER, LARGEHEAD [#27] (*Trifolium macrocephalum* [Pursh] Poiret)

A perennial herbaceous legume native to sagebrush desert, rocky site, and ponderosa pine woodlands in the western USA. A minimum of 14 inches annual rainfall is necessary for establishment.

CLOVER, SMALLHEAD [#28] (*Trifolium microcephalum* Pursh)

A perennial herbaceous legume native to moist meadows and dry hillsides in the western USA. A minimum of 14 inches annual rainfall is necessary for establishment.

CLOVER, WOOLLYHEAD (*Trifolium eriocephalum* Nutt.)

A perennial herbaceous legume native to meadows and dry hillsides in the western USA. A minimum of 12 inches annual rainfall is necessary for establishment.

CLOVER, ALSIKE (*Trifolium hybridum* L.)

A perennial herbaceous legume introduced from European sources. Alsike clover has been used in pasture seedings on alkali-saline soils.

Average number of seeds per pound: 680,000.

CLOVER, RED (*Trifolium pratense* L.)

A perennial herbaceous legume introduced from European sources to North America. Red clover has been used in pasture seedings in the western USA.

Average number of seeds per pound: 275,000.

CLOVER, WHITE (*Trifolium repens* L.)

A perennial herbaceous legume, stoloniferous, introduced from European sources to North America. Red clover has been used in pasture seedings in the western USA.

Average number of seeds per pound: 800,000.

CLOVER, THOMPSON'S (*Trifolium thompsonii* Morton)

A perennial herbaceous legume native to meadows and dry hillsides in the western USA. A minimum of 14 inches annual rainfall is necessary for establishment.

WOOLEY DAISY

DAISY, WOOLLY (*Eriophyllum lanatum* [Pursh] Forbes)

A perennial composite forb; the stems and leaves are covered with woolly hairs. It has a tap-root with a woody base; up to 24 inches in height. Woolly daisy is native to dry

prairies and grasslands, from the lowlands to above timberline in the mountains in the western USA, including the western portions of the Great Basin region. It is an important component of sage grouse habitat. Average number of seeds per pound: 810,000.

DUSTY-MAIDEN

DUSTY-MAIDEN (*Chaenactis douglasii* [Hook.] H. & A.)

A biennial or perennial forb, a member of the Composite family, up to 24 inches in height. It is native to dry grasslands and prairies, often sandy or rocky areas, chiefly in the plains and foothills in the western USA, including the Great Basin region.

Average number of seeds per pound: 350,000.

EVENING-PRIMROSE

EVENING-PRIMROSE, DESERT [#29] (*Oenothera caespitosa* Nutt.)

A perennial forb native to the interior western USA, including the Great Basin region. Desert evening-primrose is found on dry hillsides, rocky areas to ponderosa pine woodlands. Average number of seeds per pound: 1,200,000.

EVENING-PRIMROSE, HAIRY [#30] (*Oenothera deltoides* Torr. & Frem.)

A perennial forb native to the interior western USA, including the Great Basin region. It is found on dry hillsides and aridlands.



27
Trifolium macrocephalum
Largehead Clover



Oenothera deltoides 30
Hairy Evening - Primrose

J.R.J.



Trifolium microcephalum
28 Smallhead Clover



var. *marginata*



Oenothera caespitosa 29
Desert Evening - Primrose

var. *caespitosa*

FLAX

FLAX, BLUE (*Linum perenne* L.)

A perennial forb introduced from European sources to North America.

Cultivars/Varieties: ‘Appar’ blue flax was released by the USDA, Aberdeen Plant Materials Center, Idaho. Seeding rate: One to two pounds of seed per acre in a seed mixture. Average number of seeds per pound: 295,000.

FLAX, LEWIS’ [#31] (*Linum lewisii* Pursh)

A perennial forb native to western North America. Lewis’ flax occurs in meadows and foothills. **Cultivars/Varieties:** the US Forest Service Shrub Sciences Lab is planning to release Maple Grove Lewis’ flax for commercial production next year; seed source is the foothills of the Wasatch Mountains in north-central Utah. Seeding rate: one-two pounds of seed per acre in a seed mixture. Average number of seeds per pound: 420,000.

FLEABANE

Over 70 species of fleabane (*Erigeron* sp.) naturally occur in the Great Basin region including the species identified below. Fleabanes are important components of sage grouse habitat.

FLEABANE, DESERT YELLOW (*Erigeron linearis* [Hook.] Piper)

A perennial forb, member of the Composite family, native to the interior western USA. It is found on dry plains, rocky areas, and foothills.

FLEABANE, DWARF YELLOW [#32] (*Erigeron chrysopsidis* Gray)

A perennial forb, member of the Composite family, native to the interior western USA. It is found on dry plains and foothills, often associated with big sagebrush.

FLEABANE, SHAGGY (*Erigeron pumilus* Nutt.)

A perennial forb, member of the Composite family. A widespread native fleabane that occurs in the interior western USA. Average number of seeds per pound: 1,800,000.

GERANIUM

GERANIUM, WHITE (*Geranium richardsonii* Fisch. & Trautv.)

A native perennial forb that occurs, in shady areas, on prairies and foothills in the interior western USA.

GERANIUM, STICKY (*Geranium viscosissimum* F. & M.)

A native perennial forb that occurs on prairies and foothills in the interior western USA. Average number of seeds per pound: 60,000.

GILIA

GILIA, PRICKLY (*Leptodactylon pungens* [Torr.] Nutt.)

A perennial native half-shrub that naturally occurs from the deserts to dry mountain slopes in the interior western USA. Seeds per pound: unknown.

GILIA, SCARLET (*Gilia aggregata* [Pursh] Spreng.)

A native perennial forb that occurs on prairies to open woodlands in the interior USA. It is a member of the Phlox family. Average number of seeds per pound: 950,000.

GLOBEMALLOW

GLOBEMALLOW, DESERT (*Sphaeralcea ambigua* Gray)

A perennial forb native to deserts and prairies of the southern Great Basin, Colorado Plateau, and Mohave-Sonoran regions. Desert globemallow occurs on aridlands at elevations from 100 feet to 4,500 feet. Average number of seeds per pound: 500,000.

GLOBEMALLOW, GOOSEBERRYLEAF [#33] (*Sphaeralcea grossulariifolia*. [H. & A.] Rydb.)

A perennial forb native to deserts, prairies, and lower mountains in the interior western USA, including the Northern Basin and Range ecoregion. It is an important plant component in big sagebrush communities. It is a component of sage grouse habitat. Average number of seeds per pound: 500,000.

GLOBEMALLOW, MUNRO'S [#34] (*Sphaeralcea munroana* [Dougl. Spach])

A perennial forb native to deserts, prairies, and lower mountains in the interior western USA, including the Great Basin region. Munro's globemallow is an important plant component in big sagebrush communities. It is a component of sage grouse habitat.

GLOBEMALLOW, SCARLET (*Sphaeralcea coccinea* [Pursh] Rydb.)

A perennial forb native to prairies and lower mountains in the interior western USA, including the Northern Basin and Range ecoregion. Scarlet globemallow is also found in Wyoming and Montana. It is a component of sage grouse habitat. Average number of seeds per pound: 500,000.

GLOBEMALLOW, SMALL-FLOWER (*Sphaeralcea parvifolia* A. Nels.)

A perennial forb native to deserts, prairies, and lower mountains in the interior western USA, including the Central Basin and Range ecoregion. Small-flower globemallow also occurs in the Colorado Plateau region.